

ABSTRACT

In the process for producing a high-purity terephthalic acid of the invention, a slurry of crude terephthalic acid crystals dispersed in an acetic acid solvent, which is produced by a liquid-phase oxidation of p-alkylbenzene in the acetic acid solvent, is continuously converted into a slurry in water by a mother liquor displacement and then subjected to a catalytic hydrogenation. The acetic acid solvent slurry is introduced into a column equipped with a central shaft having a plurality of stirring blades along a vertical direction thereof from an upper portion of the column. The crude terephthalic acid crystals are allowed to sediment to form a high-concentration zone of terephthalic acid crystals in the column. A displacing water is fed into the column from a bottom portion thereof so as to form an upward flow of water in the column while forming circular flows in the high-concentration zone by rotation of the stirring blades, thereby bringing the terephthalic acid crystals into counter-current contact with the upward flow of water. The terephthalic acid crystals after counter-current contact with the upward flow of water is discharged from a bottom portion of the column together with the displacing water, while simultaneously taking the acetic acid solvent out of a portion of the column disposed above a feed portion for introducing the acetic acid solvent slurry. By the process, the acetic acid solvent of the acetic acid slurry is displaced by water in a high degree of mother liquor displacement.